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107E-5971-JWH February 15, 2005

Ms. Demetra Salisbury
U.S. Environmental Protection Agency Region VII
901 North Fifth Street
Kansas City, KS 66101

BOEING

Encl: Interim Action Remedial Excavation Work Plan, Boeing Tract I,

McDonnell Douglas, Hazelwood, Missouri (2 copies)

Dear Ms. Salisbury:

The enclosed Interim Action Remedial Excavation Work Plan is submitted as required by Section XI. of the Corrective Action Conditions of the Hazardous Waste Management Facility Permit, Number MOD 000 818 963. Three copies of the report have been submitted to the Missouri Department of Natural Resources as required under the terms of the permit.

Please contact me if you need additional information.

Sincerely,

Joseph W. Haake, Group Manager

Environmental and Hazardous Materials Services

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RCRA RECORDS

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INTERIM ACTION REMEDIAL EXCAVATION WORK PLAN

Boeing Tract 1 McDonnell Douglas, Hazelwood, Missouri

> Prepared for: The Boeing Company St. Louis, Missouri



January 24, 2005

Prepared by:

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	L. Brinkley, a Missouri Registered Geologist, hereby certify that the attached doc by myself or under my immediate direction.	ument was

Dennis L. Brinkley
Missouri Registered Geologist #RG0895

1.0 SITE INFORMATION

A RCRA Facility Investigation [(RFI) MACTEC, 2004] has recently been completed at the Boeing Tract 1 facility (Facility) located in Hazelwood, Missouri (Figure 1). Soil borings, temporary piezometers and groundwater monitoring wells were installed at the Facility as part of the RFI to characterize the nature of any hazardous waste/constituent releases to soil or groundwater. Soil and groundwater samples were collected and selectively analyzed for volatile organic compounds (VOCs), total petroleum hydrocarbons (TPH), semi-volatile organic compounds (SVOCs), polychlorinated byphenols (PCBs) and total metals. These results were compared in the RFI to Investigative Threashold Levles (ITLs). ITLs represent conservative values which incorporate both risk-based action levels and regulatory levels. These ITLs values were used to determine the need for further evaluation or to recommend no further investigation.

Following completion of the RFI, an assessment utilizing the RFI and other historical data was prepared using the Missouri Risk-Based Corrective Action process.

2.0 INTERIM ACTION

Based on an evaluation of the RFI data in the Risk-Based Corrective Action Report, Boeing Tract 1 (Risk Assessment & Management Group, September 2004), there was an exceedence of acceptable risk for TPH at various locations at the Facility. At four locations (Risk Area 6B, Risk Area 3A, Risk Area 3E, and Risk Area 8B) the size of the impact was limited to single soil borings (Figure 1). These TPH risk exceedence were based on a future exposure pathway of volatilization from groundwater to indoor air. Additionally there was an exceedence of risk for benzo(a)anthracene based on a future exposure pathway of direct contact with groundwater by a construction worker at Risk Area 6B.

As an Interim Action, Boeing will retain a qualified hazardous waste excavation contractor to excavate soil at each of these four areas. Prior to excavation, the soil at each area will be characterized for appropriate disposal at an off-site location. The objective of the Interim Action is to remove impacted soil that could be a source of TPH and SVOCs to shallow groundwater.

A Corrective Measures Study (CMS) will subsequently be prepared for the Boeing Tract 1 Facility. The results of this Interim Action will be included in the CMS, which will evaluate the effectiveness of the Interim Action and determine if additional remedial activities for soil and groundwater are required for the Areas.

2.1 Risk Area 6B

Risk Area 6B includes the Scrap Metal Recycling Dock area (Figure 2) has been used for recycling and accumulating scrap since the Building 27 expansion in 1954. The dock is composed of an elevated ramp and a concrete lined and curbed chip drainage area. Rolloffs containing scrap aluminum, titanium, and other metal shavings and scrap from the manufacturing process are taken to the top of the elevated ramp and loaded into open-top semi-trailers located on the drainage area below. The trailers are inclined to allow the water based coolant (cutting oil before 1990) to drain out of the trailers and into a collection drain. This collection drain is plumbed into an oil/water sump located beneath the elevated area of the dock. The water from the oil/water sump flows into the industrial waste sewer which goes to the Boeing IWTP.

TPH and benzo(a)anthracene were detected above ITLs in just one boring (RC2) in Risk Area 6B. This boring was located at the northern end of the Scrap Metal Recycle Dock.

2.2 Risk Area 8B

Risk Area 8B includes the Building 220 Trash Compactor located at the northwest corner of Building 220 on Tract 1 North (Figure 3). The trash compactor had a hydraulic oil system that contained less than 30 gallons of hydraulic oil. TPH was detected above the ITL in in just one boring location (B220N1) located adjacent to the trash compactor.

2.3 Risk Area 3A

Risk Area 3A is located on Boeing Tract 1 South and includes the Building 41 Tank Farm consisting of jet fuel underground storage tanks (USTs) located to the immediate west of Building 41 and underground jet fuel distribution lines that run from the Building 41 Tank Farm to the aircraft fueling area at Fuel Pits 1, 2, 3, and 4 south of Building 42. These are underground lines have historically run from the fuel pits between Buildings 45 and 42, to the southeast corner of Building 48. From this point the piping originally ran diagonally through the parking lot north of Building 42, currently the piping runs along the south and east edges of this parking lot.

TPH was detected in groundwater above the ITL in just one boring (B42N5) in Risk Area 3A. This boring was located adjacent to the jet fuel distribution lines north of Building 42 (Figure 4).

2.4 Risk Area 3E

Risk Area 3E is located on Boeing Tract 1 South at the east side of Building 2 where a 1,000-gallon diesel UST (B24) is located. Tank B24 was installed in 1942 and removed in 1989. The tank was not replaced. TPH was detected in groundwater above the ITL in just one boring (B2E2) in Risk Area 3E. This boring was located at the former location of UST B24 (Figure 5).

2.5 Health and Safety Plan

A site specific health and safety plan (HASP) will be developed by each contractor doing on-site construction or oversight operations in conjunction with the Interim Action. The HASP will address chemical exposure along with construction activity precautions to be conducted.

2.6 Waste Characterization

Based on the results of soil and groundwater analysis conducted during the RFI, VOCs and TPH may be present in the soil to be excavated, additionally; SVOCs and PCBs may be present in the soil at the Scrap Metal Recycling Dock. Waste characterization sampling, to allow for the proper characterization of the waste, will be conducted prior to the start of excavation. This will allow for the direct loading and transportation of excavated soil to the appropriate facility. Contingent on the results of waste characterization, it is planned that the excavated soil will be transported and disposed as a special waste at the Peoria Disposal Company facility in Peoria, Illinois.

Waste characterization sampling will be conducted using a hydraulic soil probing machine to advance a soil boring at the location of borings RC2 (Scrap Metal Recycling Dock), B42N5 (Risk Area 3A), B2E2 (Risk Area 3E) and B220N1 (Building 220 Trash Compactor). The sample from each boring with the highest photoionization detector (PID) reading will be submitted for waste characterization laboratory analysis as required by the disposal facility.

2.7 Groundwater Monitoring Piezometer Installation

Three groundwater monitoring piezometers will be installed at each of the four areas to establish the effectiveness of the soil excavation. Two piezometers will be installed approximately 10 to 15 feet from the excavation area in the down gradient direction (east, southeast). These piezometers will be installed at the same time as the soil samples are collected for waste characterization. A third piezometer will be installed within the center of each excavation during backfilling procedures (Figures 2, 3, and 4).

Soil borings for piezometer installation will be conducted using a hydraulic soil probing machine. The piezometers will be installed to a depth of 12 feet below ground surface (bgs) and will be constructed of one-inch polyvinylchloride (PVC) with 10 feet of slotted well screen and solid PVC riser pipe to a flush mounted well box set in concrete.

2.8 Remedial Excavation

The area of excavation for Risk Area 6B (Scrap Metal Recycling Dock) will be approximately 15 feet long (east-west) by 15 feet wide (north-south). The area of excavation for Area 3E will be approximately 15 feet long (east-west) by 10 feet wide (north-south). The areas of excavation for Area 3A and Area 8B will be approximately 10 feet long (east-west) by 10 feet wide (north-south).

The excavations will be extended to a depth of up to 10 feet bgs as conditions allow (slope stability, groundwater inflow, etc.).

2.8.1 Site Preparation

Site preparation will consist of the following items:

- Locate previous sampling points and establish boundaries of remedial excavation;
- Location of underground utilities in the vicinity of the proposed excavation;
- Breaking and removal of concrete and asphalt covering the excavation area with a tracked excavator;
- Disposal of the concrete and asphalt as construction debris.

2.8.2 Source Area Removal

The soil within the planned excavation will be removed using a tracked excavator and loaded directly into trucks for transportation to the appropriate disposal facility.

2.8.3 Dewatering

Dewatering of the excavation will be conducted as needed utilizing trash pumps to pump water collected in the excavation into an aboveground tank placed near the excavation. The water within the tank will be tested and a disposal plan developed for the water based on those results. Following disposal of the water, sediment will be removed from the tanks, tested and properly disposed.

2.8.4 Backfill

The remedial excavation will be backfilled with a clean clay soil, free of organic material and of such moisture content as to be readily compactable. The backfill will be placed in 8-inch lifts and compacted to approximately 90 percent Modified Proctor. Six inches of 3/8-inch minus crushed limestone rock will be placed and compacted on the backfill and the surface will be replaced to match existing.

2.8.5 Existing Monitoring Wells and Piezometers

Existing piezometers and monitoring wells outside the area of excavation will be protected from damage during the interim action; soil will not be stockpiled on/above the existing piezometers and wells.

2.8.6 Post Interim Action Monitoring

Approximately one week following completion of excavation, groundwater samples will be collected from the 12 proposed piezometers. Groundwater samples will also be collected from these piezometers three and six months following completion of the remedial excavation. Groundwater samples will be analyzed for VOCs and TPH-Gasoline Range Organics (GRO) by Environmental Protection Agency (EPA) Method 8260B and TPH-Diesel Range Organics (DRO), TPH- Oil Range Organic (ORO) by EPA Method 8270C. Groundwater samples collected from the piezometers at the Scrap Metal Recycling Dock will additionally be analyzed for polynuclear aeromatic hydrocarbons (PAHs) by EPA Method 8270C. Groundwater sampling will be conducted in accordance with the RFI Work Plan and Quality Assurance Project Plan (QAPP).

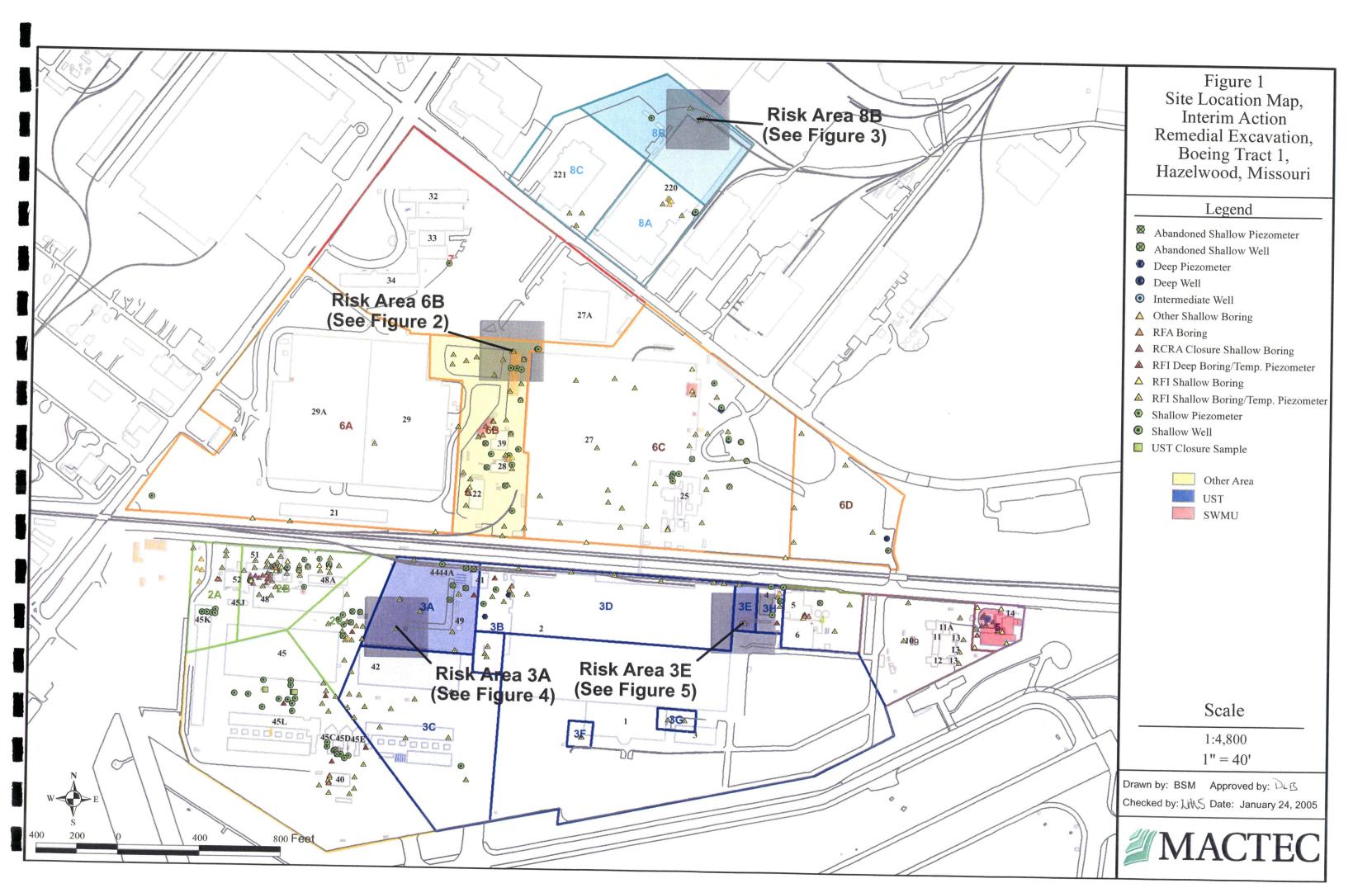
3.0 REPORTING

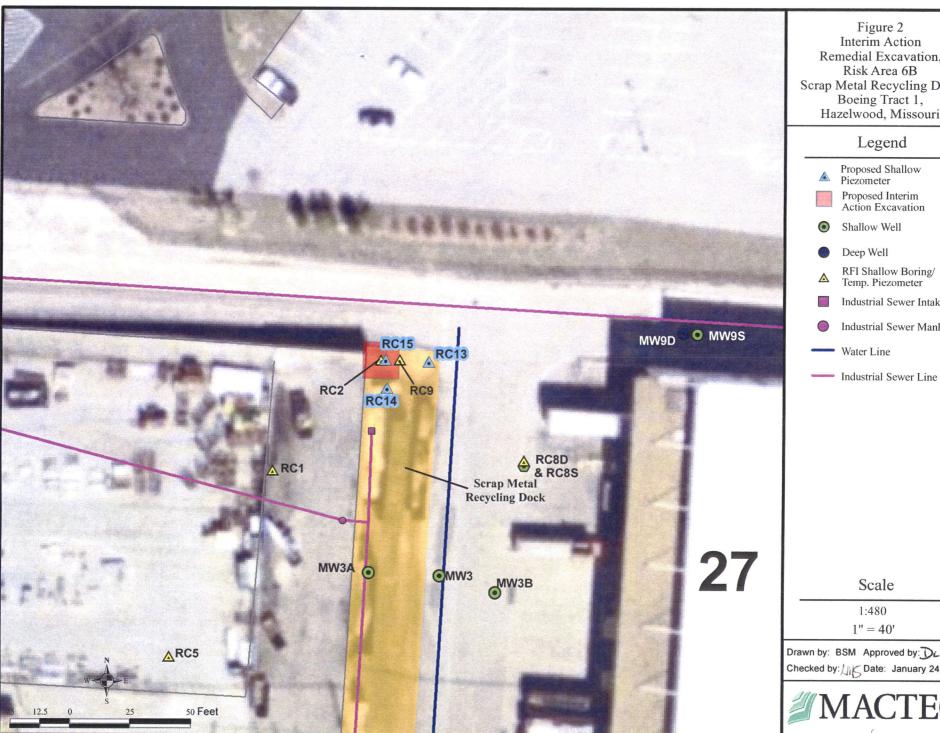
Following completion of the Interim Action and groundwater sampling, a report will be completed that documents the remedial excavation, including a summary of site activities, laboratory analysis and waste disposal. Copies of the laboratory reports and chain-of-custody forms, along with waste disposal manifests will also be included in the Interim Action Completion Report.

4.0 REFERENCES

- MACTEC Engineering and Consulting, Inc. (MACTEC). 2004. RCRA Facility Investigation Report for McDonnell Douglas Hazelwood, Missouri. December.
- Risk Assessment & Management (RAM) Group. 2004. Risk-Based Corrective Action Report, Boeing Tract 1. September.
- United States Environmental Protection Agency (US EPA). 2004. EPA SW-846 Test Methods for Evaluating Solid Waste, Physical/Chemical Methods. Third Edition and Draft Updates.

FIGURES





Interim Action Remedial Excavation, Risk Area 6B Scrap Metal Recycling Dock Boeing Tract 1, Hazelwood, Missouri

Industrial Sewer Intake

Industrial Sewer Manhole

Drawn by: BSM Approved by: DLB Checked by: Like Date: January 24, 2005



